SAN BERNARDINO COUNTY INFORMATION SERVICES DEPARTMENT

INFORMATION TECHNOLOGY
STRATEGIC PLAN 2017-2022

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EXECUTIVE SUMMARY

The Information Services Department (ISD) is County of San Bernardino's primary technology service provider entrusted with managing and safeguarding the County's enterprise mission critical systems and infrastructure. Our goals align with the overall County Strategy of consolidation of common services and solutions such as licensing, software and redundant staff across departments. And because there are always improvements to existing and new technologies we continuously look for and invest in technology that will contribute to our success.

COUNTY'S GOALS AND OBJECTIVES 2016-2018

The County of San Bernardino's Goals and Objectives for 2016 to 2018 are:
1. Implement the Countywide Vision
2. Create, Maintain and Grow Jobs and Economic Value in the County
3. Improve County Government Operations
4. Operate in a Fiscally-Responsible and Business-Like Manner
5. Ensure Development of a Well-Planned, Balanced, and Sustainable County
6. Provide for the Safety, Health and Social Service Needs of County Residents
7. Pursue County Goals and Objectives by Working with Other Agencies
8. Focus on Recovery and Resiliency Following the December 2, 2015 Terrorist Attack (SB Strong)

Reference: http://www.sbcounty.gov/uploads/cao/uploads/content/goalsandobjectives2016.pdf

INFORMATION TECHNOLOGY GOALS 2017-2022

The Information Technology Goals for 2017 to 2022 are:

1. Department Support
2. Data Management
3. Mobility
4. Modernization and Optimization
5. Communications Infrastructure
6. Security
7. Enterprise Workforce Toolset
8. Public Engagement
9. Staffing

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VISION

We envision empowering the County through innovation and enterprise solutions that promote progress through technology and provide transparency and mobility enabling staff to focus on addressing and resolving issues toward the progress of the County's mission, ensuring continued success.

WHAT WE DO

The County of San Bernardino is the largest County in the contiguous United States with over 20,000 square miles of land, 24 cities and multiple unincorporated areas. ISD is responsible for the County network and communications as well as some of the non-County Agency's infrastructures. We provide interconnectivity across the 20,000+ square miles from building to building, over mountain tops and across the desert. We support and maintain the hardware and software that drives all aspects of daily business from fire protection radios to social worker tablet computers, vendor applications and custom-built software as well as being charged with the setup, testing and rapid availability of a Disaster Recovery IT environment.

MISSION

Provide a secure, stable, and scalable infrastructure supporting business solutions that improve process and the services we provide to the County.

IT STRATEGIC GOAL: DEPARTMENT SUPPORT

The primary and most important goal of all information technology and staff members is the direct support of departmental operations in the delivery of the each department's services to the public. We must plan and prepare for events, such as brownouts and earthquakes, which may affect departments' ability to provide services to County residents and businesses. To accomplish this goal we will continue to look at and invest in technologies, such as Cloud services, to improve and reduce the potential negative impact on County operations and emergency services.

ALIGNMENT TO COUNTY GOALS

1. Improve County Government Operations (County Goal #3)
2. Focus on Recovery and Resiliency Following the December 2, 2015 Terrorist Attack (SB Strong) (County Goal #8)

TACTICS

The following tactics will ensure departmental services continue with limited interruption:

1. **Help Desk Support** – Provide core business hour support (8 am to 5pm) to assist, resolve, and coordinate extended support of any issue that may arise.
2. **Operations Support** – Provide 24/7 on-call support and continuous monitoring of the health of our infrastructure and systems.
3. **Business Continuity** – Implement IT redundancy and resilient technology to ensure that key systems continue to operate with minimal or no interruption even when infrastructure fails.
4. **Disaster Recovery** – Plan for the recovery of key systems on secondary infrastructure and the ability for emergency personnel and County executives to communicate and coordinate tactical support and services in the event of a major disaster.
5. **Emergency Notifications** – Work with County departments to implement a notification delivery mechanism using automated calls and texts for emergency notifications.
6. **GIS Support** – Provide mapping assistance either directly or through vendor relationships.

BENEFITS

By planning and investing in technology that improves our ability as a County to provide our residents and businesses services and support when they need it most, with little to no interruptions, we guarantee the safety and continued success and growth of our County, its residents and businesses.

IT STRATEGIC GOAL: DATA MANAGEMENT

ISD is the custodians for a wide variety of confidential, protected, secure departmental data. Data Management is the development, execution and supervision of plans, policies, programs, practices, and tools that control, protect, deliver and enhance the data and information assets (Data Management Association [DAMA]). The goal is to treat Data as an Asset by protecting departmental and Enterprise data and to provide the tools and assistance to analyze that data in the endeavor to assess situations, analyze opportunities, measure results, and make informed decisions. This will require that we invest in tools and technologies that will assist us in the data management process to include data cleansing, governance, auditing, data lineage tracking, and automation of delivery, which will also help meet the County's Open Data commitment.

ALIGNMENT TO COUNTY GOALS

1. Implement the Countywide Vision (County Goal #1)
2. Improve County Government Operations (County Goal #3)
3. Operate in a Fiscally-Responsible and Business-Like Manner (County Goal #4)
4. Ensure Development of a Well-Planned, Balanced, and Sustainable County (County Goal #5)
5. Pursue County Goals and Objectives by Working with Other Agencies (County Goal #7)

TACTICS

The following tactics will ensure departmental process continue with limited interruption:

1. **Capture Data at Source** – Pursue a "capture data at the source" strategy where data is input once, reducing the need for duplicate data entry and risk of keying errors.
2. **Geo-Enabled Data** – Whenever possible, data will be geo-enabled, meaning the recording of data with respect to a specific location on a map.
3. **Hosted On-Premise** – Data is hosted on-premise so that the data is more accessible for statistical analysis.
4. **Employ Data Tools and Infrastructure** – Provide data tools for cleansing, governing, and automating on a platform that supports departments at scale.
5. **Open Government Portal** – Provides platform and delivery of Open Data and Sunshine of Documents (Div 9 of Title 1 Ordinance).

BENEFITS

1. Better decisions in all aspects of government leads to a better run government
2. Reduced reliance on 'gut instinct' decisions which can carry un-intentioned biases
3. Reduced total cost of ownership for County's information assets
4. Reduced risks related to information management
5. Better response to rapidly changing business needs, within and across agencies
6. Better enables ability to collaborate with external collaborators
7. Allow people to engage with County where and when is best for them
8. Improved constituent access to data
9. Improved workplace efficiency through more efficient business applications and reporting
10. Improved transparency and usability through increased integration and sharing of data

IT STRATEGIC GOAL: MOBILITY

As the State's largest County, mobility is a necessity that provides greater agility to accommodate rapidly changing business goals and services. It is critical that departments have the ability to communicate with one another and have secure access to County data and systems from anywhere in the world to plan and manage County business and operations. We need to empower departments with the ability to provide on-site and timely services to our residents and businesses, such as food grading and construction inspections. In this effort, we will need to Invest in technology and in our infrastructure to build and support IT mobility.

ALIGNMENT TO COUNTY GOALS

1. Improve County Government Operations (County Goal #3)
2. Operate in a Fiscally-Responsible and Business-Like Manner (County Goal #4)
3. Ensure Development of a Well-Planned, Balanced, and Sustainable County (County Goal #5)

TACTICS

The following tactics will ensure departments have access to mobile technology:

1. **SBC Cloud** – Implement a cloud environment that provides access to a variety of Cloud solutions based on need that can be accessed anywhere, anytime. This will be a virtual private cloud utilizing County infrastructure along with compliant and secure vendor supplied cloud provisioning using various vendors (such as Amazon (AWS), Microsoft, IBM, etc.). This will allow a single point of provisioning and migration of resources and services as needed for Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS), as well as others (XaaS, etc.).
2. **Network Upgrades** – Expand both secure and open wireless (Wi-Fi) access within many of the County buildings that is usable by both the County and visitors to County buildings.
3. **End-Point Devices** – Allow County staff members to securely access email and other key applications from County or personal devices using the Enterprise Mobility Management (EMM) solutions.
4. **Collaboration Tools** – Support the use of mobile applications such as Microsoft Skype for Business and One Drive for Business, which enable mobile collaboration (instant messaging, emails, phone calls, document sharing, and so on).

BENEFITS

1. Redesigned business processes geared towards customer service and efficiency
2. Increased convenience of services to the public
3. Reduce costs to departments by minimizing business steps
4. Increased collaboration through open, dynamic workspaces
5. Increased business and technology productivity

IT STRATEGIC GOAL: MODERNIZATION AND OPTIMIZATION

Our County encompasses many departments with different business processes and services they provide to our residents and businesses. This has led to the creation of IT and data silos, with redundant and in some cases unqualified staffing, multiple licensing contracts and agreements for support, software, hardware and other infrastructure. This approach is costly and falls short of the County's vision to operate in a fiscally responsible and business-like manner but it also puts the County's data at risk from hackers and other forms of data breaches when those desperate networks are not properly secured. In addition, there is a high risk of County operation interruptions if these silos do not have in place disaster recovery plans and processes, redundancy and load balancing as part of their infrastructure as well as a high risk of County data loss if the data is not being properly backed up. The modernization and optimization of our IT can be accomplished through consolidation, virtualization and by rapidly expanding our infrastructure which can have an immediate, tangible effect on our IT costs and footprint.

ALIGNMENT TO COUNTY GOALS

1. Improve County Government Operations (County Goal #3)
2. Ensure Development of a Well-Planned, Balanced, and Sustainable County (County Goal #5)

TACTICS

The following tactics will ensure departments have access to modern, secure technology:

1. **Permits** – Develop a single countywide permits processing system that replaces multiple, independent Department-based processes.
2. **Accounting** – Implement a modern accounting system that will streamline the County's accounting processes.
3. **Personnel** – Implement a single countywide personnel system for tracking labor and related accounting and human resource activities.
4. **Enterprise** – Develop countywide-shared enterprise technical solutions including Enterprise GIS, Document Management, Case Management, Microsoft SharePoint, Microsoft CRM, High Performing Storage, etc.
5. **Virtualization** – When possible transition dedicated hardware to shared enterprise virtual infrastructure to maximize the use of both technical and staffing resources.
6. **Consolidation** – Identify redundant departmental staff, infrastructures, and identical use of similar licensing and technologies and provide a plan for consolidation. The selection of a hardware platform and solution deployment packaging should be based on economy of scale.
7. **SBC Cloud** – Provide single source cloud provisioning.
8. **Identity Management** – Provide the ability to manage access and privileges across multiple systems or solutions using single sign on to improve account provisioning and control.

BENEFITS

1. Modern technology expands the potential of innovative and creative solutions to the services that the Departments provide to the public
2. Modern technology improves the communication to the public by leveraging the communication methods used by the public
3. Modern technology improves the efficiency and cost of County staff by minimizing the steps necessary to perform a specific task
4. Supports Datacenter flexibility to handle sporadic demand and growth management

IT STRATEGIC GOAL: COMMUNICATIONS INFRASTRUCTURE

As the largest County by land area in the contiguous United States, the County views a strong, viable communications infrastructure as a vital component to the overall IT strategy. The County's enterprise communications infrastructure spans voice and data technologies, land-based networks, microwave transmissions, and radio used by safety personnel. This infrastructure is critical to County operations and we must continue to invest in technologies that improve, secure and streamline communications.

ALIGNMENT TO COUNTY GOALS

1. Improve County Government Operations (County Goal #3)
2. Ensure Development of a Well-Planned, Balanced, and Sustainable County (County Goal #5)

TACTICS

The following tactics will ensure departments have comprehensive communications:

1. **Radio Services** – Provide standards-based digitally encrypted radio services to both County Departments and a variety of other agencies who deliver emergency and non-emergency response services within the County of San Bernardino.
2. **Re-banding Effort** –Implement the federally mandated 800 MHz re-banding effort to reduce interference to public safety communications in cooperation with other agencies, Sprint, and the Federal Communications Commission.
3. **Voice over IP** – Transition all County-based phones from traditional lines to Voice-over-IP technology by leveraging existing, emerging, and innovative technologies to enhance and improve voice services offerings while ensuring the privacy, integrity and reliability of telephony services that are sustainable and cost effective long term.
4. **Network** – Continue to invest in hardware and technology to provide on demand elasticity of network bandwidth and capacity to meet the dynamic needs of County departments.

BENEFITS

1. Improved and more reliable communications within the Departments
2. Improved and more reliable communications with other, non-County agencies (police, fire, etc.)
3. Increased access to modern communication methods, such as voice-over-IP, and the associated modern communication techniques
4. Improved access to communications in more parts of the County's wide geography
5. Reduce the time needed to increase network capacity and speed
6. Increases Business Continuity capabilities

IT STRATEGIC GOAL: SECURITY

Worldwide IT security is an increasingly important topic with the various breaches and concerns raised in the public news daily. We need to safeguard County data and infrastructures against security threats that will compromise our residents and businesses private and confidential information as well as disrupt County operations and services. Security beaches can affect the safety of our law enforcement officers as well as emergency personnel and could potentially cost the County millions of dollars in efforts to recover from the impact of these attacks. We must work to mitigate, transfer, accept or avoid information risk related to people, processes and technologies to protect the integrity and availability of information.

ALIGNMENT TO COUNTY GOALS

1. Improve County Government Operations (County Goal #3)

TACTICS

The following tactics will ensure departments have secure IT:

1. **Security Officer** – Establish County IT security officer who focuses on security topics.
2. **Security Policies** – Develop policies that will increase the overall attention on security to establish minimal IT security requirements.
3. **Security Training** – Develop training that will bring attention and education to security topics throughout the County.
4. **Security Tools** – Implementing security tools at all levels (network, server, and workstation) to mitigate known security threats, to alert when an incident occurs, and to respond to an incident when one occurs.
5. **Business Applications** – Define consistent and integrated methodologies for design, development and implementation.

BENEFITS

1. **Protected** – Data within the County will be more secure and accessible only to those who have permission to that data
2. **Reputation** – Both County staff and the public will have greater confidence that their data is being treated with the highest respect and is very secure
3. **Continuity** – Secure data also implies safe data that continues to be available in the event of a disaster or other event
4. **Compliance** – The County will be fully compliant with existing and potentially future compliance regulations

IT STRATEGIC GOAL: ENTERPRISE WORKFORCE TOOLSET

Departments across our County require a common set of tools that assist them in the performance of their work. They require secure methods for collaborative communication and problem solving, internally and from anywhere in the world. These tools must adhere to County technical and compliance standards and be enterprise solutions that are managed for ease of deployment and consumption, high availability, proper licensing, auditing, installation and upgrades, and technology evaluation for continued growth and improvement.

ALIGNMENT TO COUNTY GOALS

1. Improve County Government Operations (County Goal #3)
2. Operate in a Fiscally-Responsible and Business-Like Manner (County Goal #4)
3. Ensure Development of a Well-Planned, Balanced, and Sustainable County (County Goal #5)

TACTICS

The following tactics will ensure departments have access to the best toolsets:

1. **Technical RFP Reviews** – Review every RFP that has any relation to technology for adherence to various County technical and compliance standards.
2. **Back Office Software** – Provide the following countywide software solutions: word processing, spreadsheets, presentation, note taking, and flow charting.
3. **Document Management** – Provide a countywide enterprise solution for departmental consumption and collaboration that is easily accessible.
4. **GIS** – Provide a countywide enterprise solution for departmental consumption that is easily accessible.
5. **Email** – Provide a countywide enterprise solution for departmental and business to business communication.
6. **User Authentication** – Provide a countywide secure single sign on method for user authentication for network, applications and other services that require user authentication.
7. **Collaboration Technology** – Provide a secure countywide solution to allow departmental staff to communicate and collaborate locally or from anywhere in the world, such as: video conferencing, conference calling, web casting, screen sharing, collaborative document editing, and white boarding.
8. **Hardware** – Provide a clear plan for approving, managing and supporting hardware used by county staff such as: desktops, laptops, mobile phones and tablets

BENEFITS

1. Reduced costs as compared to individual licensing and related software management
2. Minimized up-front costs and spreading payments over multiple years
3. More predictable year-to-year costs and easier budgeting
4. Increased accessed to technical support (often 24x7)
5. Flexibility to access software without procurement procedures
6. More consistent software versions leading to less business confusion and improved technical support by having fewer versions to support
7. Centralized management of deployments and upgrades

IT STRATEGIC GOAL: PUBLIC ENGAGEMENT

Residents and businesses are increasingly asking for more transparency and easy to use streamlined access to County data and services. Departments need to be empowered to easily deploy solutions that benefit and engage the public. They need to have the ability to manage their own content to provide the public the most current and timely information and to respond quickly to events that may require alerts or other messaging on their public websites.

ALIGNMENT TO COUNTY GOALS

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TACTICS

The following tactics will ensure departments have the necessary IT to engage the public:

1. **Public CMS** – Support multiple Content Management (CMS) sites where Departments can more easily update public facing website information in response to any event or need.
2. **Permits** – Provide a new integrated Permits portal that will be available to the public to apply for, pay for, and manage their permit requests.
3. **Finance at a Glance** – Provide, in collaboration with the CAO, a website that provides insight into the County's budgeting and expenditures.
4. **Countywide Plan** – Provide a web site that reaches out to the public for County planning.
5. **Open Government Portal** – Provide an open government portal that is AB169 compliant.

BENEFITS

1. More citizens will engage with the government on policy discussion and support
2. Advocacy groups will have access to government data for producing new and better insights
3. New businesses can use open data to plan for new services and products
4. Departments are empowered to provide better services to the public

IT STRATEGIC GOAL: STAFFING

At the core of everything we do and hope to achieve are our people. We must work to hire the most qualified workforce that values diversity and a sense of service to our County and its residents. But just as important as the hiring process, it is critical that we have a clear plan in place for employee retention and career growth and opportunities within our department and the County.

ALIGNMENT TO COUNTY GOALS

1. Create, Maintain and Grow Jobs and Economic Value in the County (County Goal #2)

TACTICS

The following tactics will ensure that IT staff has the tools they need to perform their work and a path for career growth.

1. **Diversity** – Cultivate an inclusive environment where diversity of thought and expression are valued, emphasizing the importance of tolerance in the workplace, promoting acceptance of our differences and providing an environment where employees can thrive.
2. **Skills Training and Development** – Provide access to training and career growth resources and services that encourages staff to continuously develop their skills and or to learn new ones. Create programs for cross training and mentorship that vary from technical to soft skills.
3. **Work Life Balance** - Promote a healthy work/life balance. This approach will increase employee productivity and strengthen their bond with our organization and the County.
4. **Recruitment Strategies** – Identify competitive recruitment strategies designed to attract and retain the best-qualified candidates that allow us to compete with private industries.
5. **Employee Retention** – Provide career growth opportunities, through mentorship, cross training, continued education, employee recognition, and benefits that compete with private industries.
6. **Flexible Work Environments** – Provide a flexible work environment and work schedule where possible while ensuring a high level of customer and support services.
7. **Managed Services** – Leverage contract staff working with reputable technology agencies to fill the ongoing need for temporary and contract help.
8. **As-a-Service Framework for IT Management** – Organize and structure our organization with Service Management best practices in mind aligned with the Countywide plan and focusing on customer needs and services.

BENEFITS

1. On-boarding qualified staff will ensure that we can meet our goals
2. Retaining qualified staff saves the county costs associated with hiring and training new staff
3. A diverse workforce opens the door to a new level of creative thinking and problem solving
4. Augmenting our workforce with temporary contract help allows us to react quickly to a temporary increase on demand of our resources